p137.

(35) $\left(\sqrt{2z}\right)^2 = \left(\sqrt{3z+12} - 2\right)^2$

$\sqrt{16} \stackrel{?}{=} \sqrt{36} - 2$

$4 = 6 - 2$ ✓

$2z = 3z + 12 - 4\sqrt{3z+12} + 4$

$-z - 16 = -4\sqrt{3z+12}$

$(z+16)^2 = \left(4\sqrt{3z+12}\right)^2$

$z^2 + 32z + 256 = 16(3z+12)$

$z^2 + 32z + 256 = 48z + 192$

$z^2 - 16z + 64 = 0$

$(z-8)^2 = 0$

$z = 8$

38 $\left(\sqrt{2p-5}-2\right)^2=\left(\sqrt{p-2}\right)^2$

$2p-5-4\sqrt{2p-5}+4=p-2$

$-4\sqrt{2p-5}=-p-1$

$\left(4\sqrt{2p-5}\right)^2=(p+1)^2$

$16(2p-5)=p^2+2p+1$

$32p-80=p^2+2p+1$

$0=p^2-30p+81$

$0=(p-27)(p-3)$

$p=27 \quad | \quad p=3$

$\sqrt{2p-5}-2=\sqrt{p-2}$

$\sqrt{54-5}-2=\sqrt{25}$ ~~$\sqrt{9}-2=\sqrt{25}$~~

$\sqrt{49}-2=5$

$7-2=5$

✓

$\sqrt{1}-2=\sqrt{1}$

$1-2\neq 1$

① $\left(\sqrt{2\sqrt{7x+2}}\right)^2 = \left(\sqrt{3x+2}\right)^2$

$\left(2\sqrt{7x+2}\right)^2 = \left(3x+2\right)^2$

$4(7x+2) = 9x^2+12x+4$

$28x+8 = 9x^2+12x+4$

$0 = 9x^2-16x-4$

$0 = (9x+2)(x-2)$

$x = \frac{2}{9} \quad x = 2$

$\sqrt{2\sqrt{7(\frac{2}{9})+2}} = \sqrt{3(\frac{2}{9})+2}$

$\sqrt{2\sqrt{\frac{14}{9}+2}} \quad \sqrt{\frac{6}{9}+\frac{18}{9}}$

$\sqrt{2\sqrt{\frac{4}{9}}} = \sqrt{\frac{4}{3}} \quad \sqrt{\frac{12}{9}} = \sqrt{\frac{4}{3}}$

$\left(\sqrt{2\sqrt{7x+2}}\right)^4 = \left(\sqrt{3x+2}\right)^4$

$\left(2\sqrt{7x+2}\right)\left(2\sqrt{7x+2}\right) =$

(33) $\left(\sqrt{m+7}+3\right)^2=\left(\sqrt{m-4}\right)^2$

$m+7+6\sqrt{m+7}+9=m-4$

$\frac{6\sqrt{m+7}}{6}=\frac{-20}{6}$ ← $6\sqrt{m+7}\neq -20$

$\sqrt{m+7}\neq -\frac{10}{3}$

$\emptyset$